



East Devon District Council Level 2 Strategic Flood Risk Assessment Detailed Site Summary Tables




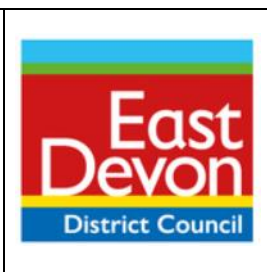
Site Code	Exmo_50
Address	Exmouth Police Station
Area	0.6 hectares
Current land use	Disused police station
Proposed land use	Mixed Use
Flood Risk Vulnerability	More vulnerable
Sources of flood risk	
Location of site	<p>The site is located at Exmouth Police station to the south of North Street and east of Clarence Road.</p> <p>The site is located approximately 450m south of the Withycombe Brook, and located just outside of the catchment, according to the FEH Webservice. It is therefore unlikely the site drains north into this catchment due to grass banks alongside North Street.</p>
Topography	<p>The Environment Agency's 1m resolution 2022 Composite LiDAR shows that the topography of the site falls from the northeast and southeast (13mAOD) to the west (7.8mAOD), with a steep then gradual decline. The gradient is approximately 4%, therefore the site is considered to have a gentle slope and is unlikely to affect any proposed SuDS features.</p> <p>Based on satellite imagery it is likely the site drains west into a drain/manhole on Clarence Road.</p>
Existing drainage features	No existing drainage features on site have been identified, with the exception of the drain/manhole to the west of the site.
Fluvial	The proposed development site has not been identified to be in an area at risk of fluvial flooding.
Fluvial plus climate change	The proposed development site has not been identified to be in an area at risk of fluvial flooding in the future.
Tidal	The proposed development site has not been identified to be in an area at risk of tidal flooding.
Tidal plus climate change	The proposed development site has not been identified to be in an area at risk of tidal flooding in the future.
Surface Water	<p>Available data and mapping: Environment Agency's Risk of Flooding from Surface Water dataset for the 3.33%, 1% and 0.1% AEP events.</p> <p>Exmo_50 - Surface Water 3.33% AEP - Depth Exmo_50 - Surface Water 3.33% AEP - Hazard Exmo_50 - Surface Water 3.33% AEP - Velocity Exmo_50 - Surface Water 1% AEP - Depth Exmo_50 - Surface Water 1% AEP - Hazard</p>



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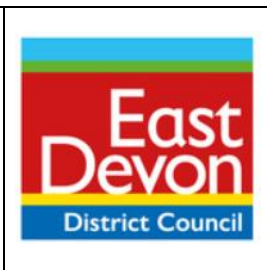
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Flooding	<p>the 3.3% AEP is 40% and for the 1% AEP is 45%. As Risk of Flooding from Surface Water data with a 65% uplift was already available this has been used as the best available data for the 3.3%, 1% and 0.1% AEPs.</p> <p>Data analysis:</p> <p>3.3% AEP (1 in 30 year) plus 65% climate change event:</p> <table style="width: 100%; border: none;"> <tr> <td>Proportion - 11%</td> <td>Mean Depth - 0.24m</td> </tr> <tr> <td>Max Depth - 0.44m</td> <td>Mean Velocity - 0.08m/s</td> </tr> <tr> <td>Max Velocity - 0.31m/s</td> <td>Mean Hazard - 0.82</td> </tr> <tr> <td>Max Hazard - 1.22</td> <td></td> </tr> </table> <p>1% AEP (1 in 100 year) plus 65% climate change event:</p> <table style="width: 100%; border: none;"> <tr> <td>Proportion - 20%</td> <td>Mean Depth - 0.25m</td> </tr> <tr> <td>Max Depth - 0.53m</td> <td>Mean Velocity - 0.24m/s</td> </tr> <tr> <td>Max Velocity - 1.4m/s</td> <td>Mean Hazard - 0.89</td> </tr> <tr> <td>Max Hazard - 1.26</td> <td></td> </tr> </table> <p>0.1% AEP (1 in 1000 year) plus 65% climate change event:</p> <table style="width: 100%; border: none;"> <tr> <td>Proportion - 38%</td> <td>Mean Depth - 0.29m</td> </tr> <tr> <td>Max Depth - 0.7m</td> <td>Mean Velocity - 0.43m/s</td> </tr> <tr> <td>Max Velocity - 1.81m/s</td> <td>Mean Hazard - 0.97</td> </tr> <tr> <td>Max Hazard - 1.53</td> <td></td> </tr> </table> <p>Flood characteristics: The site is shown to be at risk of flooding in all three scenarios with localised flooding to the centre and north of the site during the 3.3% plus climate change event, with an average mean depth of 0.24m. During the 0.1% AEP event 38% of the site is shown to flood with a flow path surrounding the existing building on site, increasing the mean depth to 0.29m. The average velocity on site is shown to be no more than 0.43m/s, with a maximum velocity of 1.81m/s during the 0.1% AEP plus 65% climate change event. The average hazard rating is 0.97 and is therefore stated to be a 'danger to some'.</p>	Proportion - 11%	Mean Depth - 0.24m	Max Depth - 0.44m	Mean Velocity - 0.08m/s	Max Velocity - 0.31m/s	Mean Hazard - 0.82	Max Hazard - 1.22		Proportion - 20%	Mean Depth - 0.25m	Max Depth - 0.53m	Mean Velocity - 0.24m/s	Max Velocity - 1.4m/s	Mean Hazard - 0.89	Max Hazard - 1.26		Proportion - 38%	Mean Depth - 0.29m	Max Depth - 0.7m	Mean Velocity - 0.43m/s	Max Velocity - 1.81m/s	Mean Hazard - 0.97	Max Hazard - 1.53	
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Reservoir	The site is not located near to a Wet or Dry day reservoir flooding extent, according to the Environment Agency's reservoir flood mapping.																								
Groundwater	<p>Available data and mapping: The JBA Groundwater Flood Data Map (GW5) is provided as a 5m resolution grid.</p> <p>Exmo_50 - Groundwater Emergence</p> <p>Flood characteristics: Groundwater levels on site are shown to be 'low risk'.</p>																								
Sewers	No evidence of sewer flooding has been identified at or near the development site.																								
Flood history	<p>The site is not shown to be located within the Environment Agency's Recorded Flood Outlines extent.</p> <p>There are no flooding incidents within Devon County Council's dataset recorded within 100m of the site.</p>																								

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Site Code	Exmo_50	
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Policy zones		
Critical drainage areas	The site has not been identified to be located within a critical drainage area. Mapping: Exmo_50 - Critical Drainage Area	
Coastal change management areas	The site has not been identified to be located within a coastal change management area.	
Flood risk management infrastructure		
Existing defences	The Environment Agency's AIMS dataset shows there are no formal flood defences within the vicinity of the site.	
Emergency planning		
Flood warning	The site has not been identified to be located within an area of flood warning or alerts. Mapping: Exmo_50 - Flood Warnings and Alerts	
Access and egress	Access and egress are available along Clarence Road to the west of the site heading south unaffected by flooding in modelled events, and with shallow flood depths (less than 0.3m) heading north in the 1% AEP plus climate change surface water modelling.	
Requirements for drainage control and impact mitigation		
Broad-scale assessment of possible SuDS	<p>Geology and Soils</p> <p>The geology consists of mudstone, siltstone and sandstone, with clay, silt and sand superficial deposits. No superficial deposits are located to the west of the site. The soils are shown to be slightly acid loamy and clayey soils with impeded drainage. This suggests that infiltration is unlikely to be a viable means of surface water disposal.</p> <p>SuDS</p> <ul style="list-style-type: none"> • The site is located within a Nitrate Vulnerable Zone. Therefore, early engagement with the LLFA and the EA is recommended to determine requirements for the site to manage the impact to surrounding watercourses. Consideration of water quality is likely to be of high importance and demonstrated through the use of the Simple Index Approach. • The site has not been identified to be located within a historic landfill site or a groundwater Source Protection Zone. • Groundwater levels on site are shown to be 'low risk' during a 1% AEP flood event, however the soils suggest infiltration is unlikely due to impeded drainage from clayey soils. The infiltration potential of the site should be confirmed through infiltration testing, in line with BRE 365. Offsite discharge may therefore be required to discharge surface water runoff. • Surface water discharge rates should not exceed pre-development discharge rates for the site and should be designed to be as close to 	



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	https://www.devon.gov.uk/floodriskmanagement/document/sustainable-drainage-system-guidance-for-devon-2023/#dcc-documents-cpt-contents	
NPPF and planning implications		
Exception Test requirements (Local Authority considerations)	<p>The Local Authority will need to confirm that the Sequential Test has been carried out in line with national guidelines. The Sequential Test will need to be passed before the Exception Test is applied.</p> <p>The NPPF classifies the usage as “More Vulnerable”, this type is taken into consideration for the Exception Test.</p> <p>Given the site is in Flood Zone 1, provided development is proposed outside of the areas at risk of surface water flooding, the Exception Test is not required for this site.</p>	
Requirements and guidance for site-specific Flood Risk Assessment (Developer considerations)	<p>Flood Risk Assessment:</p> <p>The Level 1 SFRA has more guidance on the requirements for site specific Flood Risk Assessments and relevant policies and information applicable to development within East Devon District Council.</p> <ul style="list-style-type: none"> • Consultation with the East Devon District Council, and where relevant South West Water, Devon County Council, and the Environment Agency should be undertaken at an early stage. • Developers should consult with South West Water to ensure that the development aims to help achieve the targets of the Drainage and Wastewater Management Plan. • Development plans should use the Level 1 SFRA for East Devon District Council, as well as the Local Flood Risk Management Strategies to identify cumulative flood risk issues. It should also promote an integrated approach to water management. • The site is located within a high risk Cumulative Impact Assessment (CIA) catchment and therefore specific CIA policy documents are applicable to this site. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> • The developer will need to show, through an FRA, that future users of the development will not be placed in danger from flood hazards throughout its lifetime. It is for the applicant to show that the development meets the objectives of the NPPF’s policy on flood risk. For example, how the operation of any mitigation measures can be safeguarded and maintained effectively through the lifetime of the development. (Para 048 Flood Risk and Coastal Change PPG). • The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff magnitudes from the development are not increased by development across any ephemeral surface water flow routes. A drainage strategy should help inform site layout and design to ensure runoff rates do not exceed greenfield rates. • Arrangements for safe access and egress are likely to be possible, however these will need to be considered further within a site-specific 	



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	FRA for the surface water events with an appropriate allowance for climate change, using the depth, velocity, and hazard outputs.

Key messages

The site is generally identified to be at low risk, and development is likely to progress if:

- A site-specific FRA is undertaken to assess the risk of surface water flooding in relation to the proposed development, and the access and egress arrangements.
- Development is placed outside of the areas at risk from surface water flooding.
- Infiltration rates are assessed on site as part of a drainage strategy.
- Surface water is not discharged into the combined sewer.
- There is early engagement with the LLFA and the EA on the proposed SuDS measures and infiltration rate to discuss requirements on the site meeting relevant conditions due to the sites location within a Nitrate Vulnerable Zone.
- Cumulative Impact Assessment policy documents must be understood, and the cumulative impact of development should be considered.